

Cover Page for 1st Grade Math Scope and Sequence

The purpose of this document is to clarify the intentions of this Scope and Sequence (SAS) and to provide a window into the thinking behind the choices made. If you have further questions, concerns, and/or ideas, please reach out to Camsie McAdams, Director of STEM. We are excited to make our math work exemplary throughout the district!

PLEASE NOTE THAT STANDARDS APPEARING IN BOLD IN THE SAS DOCUMENTS ARE CONSIDERED MAJOR FOCUS STANDARDS (guidance from PARCC).

1. What is our main focus in each unit?

Unit 1.1 – Data: using data to learn about each other, to establish a context for discussing numbers, and to build student’s language for a math-rich environment

Unit 1.2 – Measuring: measurement and comparing lengths of objects

Unit 2.1 – Digits and Values: counting, comparing numbers, and place value

Unit 3.1 – Shape Attributes: classifying and constructing shapes

Unit 3.2 – Shape Parts: shape fractions and telling time

Unit 4.1 – Comprehending Computation: properties of addition and subtraction

Unit 5.1 – Evaluating Equations: making equations by understanding the equal sign and how to find missing numbers in addition and subtraction number sentences

Unit 6.1 – Bridge: addition and subtraction (within 100) within context and conceptual understanding

2. Why are we starting with data when place value and computation are so critical at this grade level?

The goal is to develop students’ language when they are describing the world around them. Place value and computation (as we have traditionally taught it) are abstract representations and will come later in the year. At the onset, we want our young children getting a broader sense of how to make sense of their world – through sorting, describing, and comparing objects and quantities. Using data generated by the class and community is a natural way to provide this context.

3. What am I supposed to teach and do in unit 6.1?

The sixth instructional window is meant to be a bridge from one grade level to the next. We have selected some of the priority standards from this grade and linked them to similar standards in the upcoming one so that we are preparing our students for their next steps. Additionally, this is the time to really ensure all students have mastered the fluency standards and the major foci for this grade level.

4. How can I incorporate the routine/fluency standards since they happen throughout the year?

Counting quantities or rote counting and adding numbers up to 20 are skills you can incorporate in daily morning meetings or morning/math messages. For example, when taking attendance, count and compare how many people are here versus how many are not; or how many boys and how many girls are in the class. Children will also develop this fluency through repeated exposure, practice, and discussion. Using tens frames and two-sided counters, for example, are a great way to incorporate this skill in a fun practice.

5. How can I incorporate the Standards for Mathematical Practice and why are only 2-3 underlined in each Instructional Unit?

While the Standards for Mathematical Practice are not necessarily content-specific, we felt that some were better aligned to each unit. These standards should drive your pedagogical work every day. They are “habits of mind” that permeate the way we think and act on a daily basis. We recommend naming these with your students (although putting them in kid-friendly language may help at this age), so that the standards become part of your classroom’s norms.

6. What role does assessment play in my math instruction?

Formative (on-going) assessments are an important part of instruction at every grade level. We strongly encourage you to take anecdotal notes on what your students are doing, saying, figuring out, and moving towards on a daily basis (at least for a few students per day). Building this type of work into your practice as a routine will make it seem less daunting and will also provide you with valuable information to inform your instruction – whether it be for your class, for a small group, or for individual students.

7. What does it really mean to have “real world applications”? Can I just use word problems in my instruction?

This is an interesting question! We encourage you to have conversations with colleagues about “school math” versus “real world” applications. Are we writing word problems for word problems’ sake or are we really asking students to apply concepts at a deeper level? For example, giving students the problem, “Jake had 4 candy bars and gave 3 away. How many does he have now?” is more of a “school math” problem. We may not need to figure this out in our “real life”. However, if we are comparing shapes, we may authentically ask, “How many more sides does a square have than a triangle?”

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First Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p>August 27 – October 11</p> <p>Instructional Days: 32</p>	<p>1.1 Data</p> <p>Approximate number of instructional days: 10 days</p>	<p>1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p> <p>1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem). <i>(Note: these word problems should relate to the graphical data that drives this unit)</i></p> <p>1.OA.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</i></p>
	<p>1.2 Measuring</p> <p>Approximate number of instructional days: 22 days</p>	<p>1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p> <p>1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. <i>(Note: Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.)</i></p> <p>1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. <i>(Note: as it relates to the measurement of length units only)</i></p> <p>1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem). <i>(Note: as it relates to the measurement of length units only)</i></p>

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Routine/Fluency Standards:

1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks. *(Note: this is a routine standard throughout the year – something to do every day - and will be a focus in Instructional Window 3.)*

Standards for Mathematical Practice: *Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

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Second Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p>October 12 – December 5</p> <p>Instructional Days: 34</p>	<p>2.1 Digits and Values</p> <p>Approximate number of instructional days: 34 days</p>	<p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p> <p>1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <ul style="list-style-type: none"> a. 10 can be thought of as a bundle of ten ones — called a “ten.” b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). <p>1. NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.</p> <p>1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.</p> <p>Routine/Fluency Standards:</p> <p>1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>

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		<p>Standards for Mathematical Practice: <i>Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.</i></p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. <u>Reason abstractly and quantitatively.</u> 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. <u>Look for and make use of structure.</u> 8. Look for and express regularity in repeated reasoning.
Third Instructional Window	Instructional Units	<p>Common Core State Standards for Mathematical Content</p> <p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p>
December 6 – February 6 Instructional Days: 33	3.1 Shape Attributes Approximate number of instructional days: 11 days (before winter break)	<p>1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.</p> <p>1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.</p>
	3.2 Shape Parts Approximate number of instructional days: 22 days (after winter break)	<p>1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>, and use the phrases <i>half of</i>, <i>fourth of</i>, and <i>quarter of</i>. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.</p> <p>1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.</p> <p>Routine/Fluency Standards:</p> <p>1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known</p>

	<p>equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.</p> <p>Standards for Mathematical Practice: <i>Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.</i></p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
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Fourth Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p>February 7 – March 29</p> <p>Instructional Days: 34</p>	<p>4.1 Comprehending Computation</p> <p>Approximate number of instructional days: 34</p>	<p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p> <p>1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p>1. OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p>1.OA.3 Apply properties of operations as strategies to add and subtract. <i>3 Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)</i></p> <p>1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p>Routine/Fluency Standards:</p> <p>1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>
		<p>Standards for Mathematical Practice: <i>Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.</i></p> <ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others.

		<div>4. Model with mathematics.</div> <div>5. Use appropriate tools strategically.</div> <div>6. Attend to precision.</div> <div>7. Look for and make use of structure.</div> <div>8. Look for and express regularity in repeated reasoning.</div>
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Fifth Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content
<p>April 8 to May 3</p> <p>Instructional Days: 18</p>	<p>5.1 Evaluating Equations</p> <p>Approximate number of instructional days: 18</p>	<p>For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.</p> <p>1. OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</i></p> <p>1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \square$.</i></p> <p>1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.</p>
		<p>Routine/Fluency Standards:</p> <p>1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>

Standards for Mathematical Practice: *Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
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Sixth Instructional Window	Instructional Units	Common Core State Standards for Mathematical Content For each instructional window, instruction should focus on these standards as they will be assessed on the interim assessment. Order of standards is intentional.
<p>May 6 to June 20</p> <p>Instructional Days: 32</p>	<p>6.1 Major Focus Standards and Bridge to 2nd Grade</p> <p>Approximate number of instructional days: 32</p>	<p>1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.</p> <p>2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions,(e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).</p> <p>Routine/Fluency Standards: <i>By the end of the year, all students should have mastered the following fluencies:</i></p> <p>1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</p> <p>1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.</p>

Standards for Mathematical Practice: *Note: These standards should drive your pedagogical practice every day. The underlined standards are critical ones for this unit.*

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
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